Public Transit Route Performance Report

Annual Report for State Fiscal Year (SFY) 2020

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Prepared for VTrans by:

STEADMAN HILL
CONSULTING, INC.

in association with

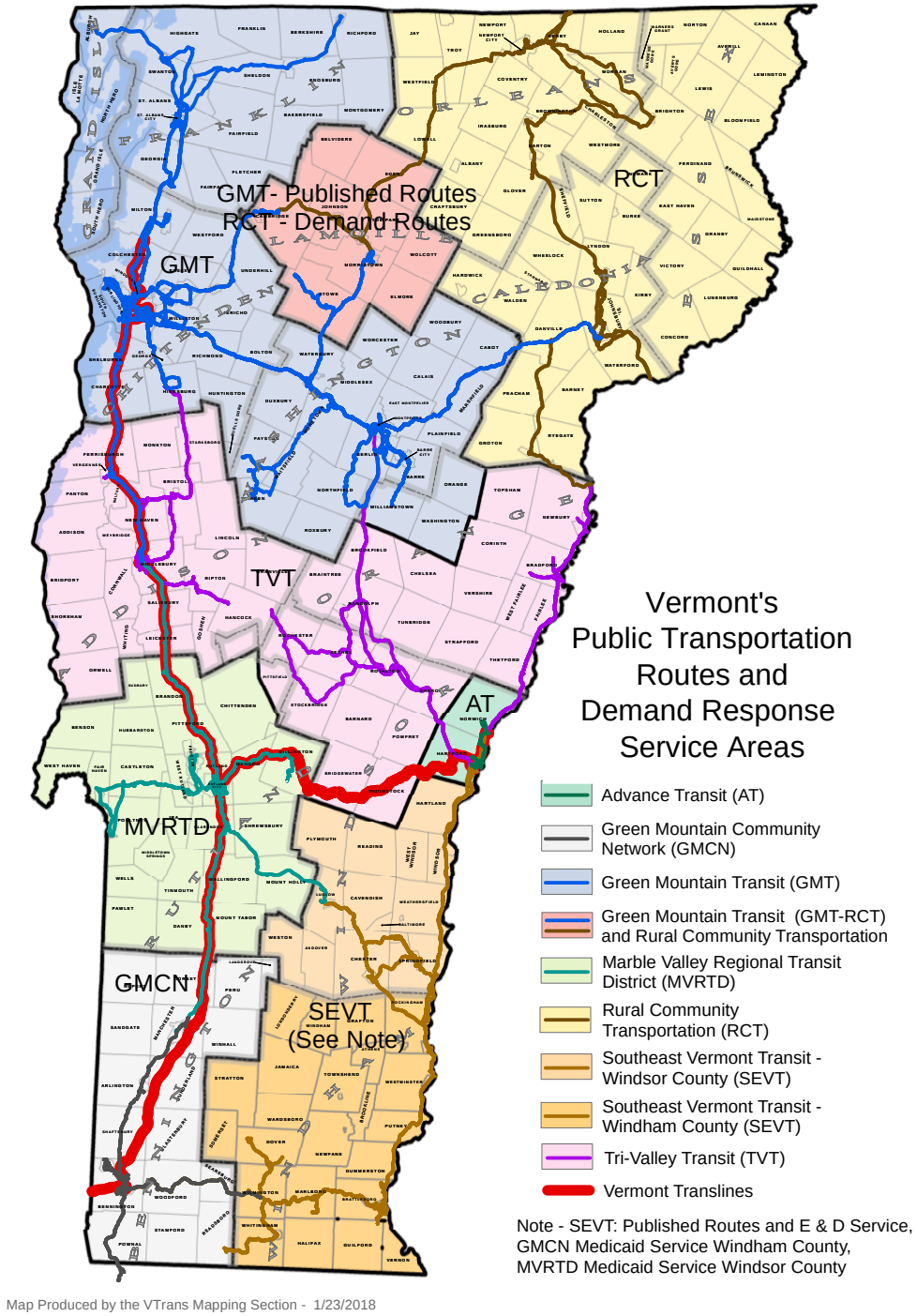
FOURSQUARE ITP
INTEGRATED TRANSPORTATION PLANNING

KEY OF VERMONT TRANSIT SYSTEMS AND DIVISIONS

AT	Advance Transit
GMCN	Green Mountain Community Network, Inc.
GMT-Rural	Green Mountain Transit-Rural (previously GMTA)
GMT-Urban	Green Mountain Transit-Urban (previously CCTA)
MVRTD	Marble Valley Regional Transit District
RCT	Rural Community Transportation, Inc.
SEVT-The Current	Southeast Vermont Transit-The Current (previously CRT)
SEVT-The MOOver	Southeast Vermont Transit-The MOOver (previously DVTA)
TVT-ACTR	Tri-Valley Transit, Inc. ACTR (previously ACTR)
TVT-Stagecoach	Tri-Valley Transit, Inc. Stagecoach (previously STSI)
VABVI	Vermont Association for the Blind and Visually Impaired

Figure 1 illustrates the service areas of Vermont's public transit providers. The areas previously served by ACTR and STSI are now shown as Tri-Valley Transit (TVT).

Figure 1: Service Areas of Vermont's Public Transportation Providers



Source: VTrans, December 2017

EXECUTIVE SUMMARY

VTrans manages Vermont's public transit program, and an essential element of this management is monitoring the performance of all routes and services operated by the state's transit providers. This Public Transit Route Performance Review for state fiscal year (SFY) 2020 presents the results of this annual performance evaluation for public transit services across Vermont. This process helps to ensure that public investment in transit is well spent by comparing performance at the route level to appropriate standards and identifying routes and services that need improvement.

As with past annual evaluations, VTrans grouped public transit routes and services in categories such as Urban, Small Town, and Demand Response. However, a number of changes were made to the report, following the recommendations of the 2020 Public Transit Policy Plan. Rather than using two separate route evaluation measures, this report focuses on one measure to determine the performance of a route: cost effectiveness. The report does include analysis of both ridership and cost *efficiency*, comparing Vermont routes to sets of national peers, as has been done in the past. But the ratings of acceptable, successful or underperforming for the cost-effectiveness measure are now based on the comparison of a route's performance to the average performance of Vermont routes by class, rather than the comparison to national peers.

Of course, comparisons with performance reports from prior years cannot ignore the huge impact that the COVID-19 pandemic has had on transit ridership. Beginning in the middle of March, ridership dropped steeply on all transit services as stay-at-home orders took effect. Many bus routes and demand response services experienced ridership declines of 70% or more. Some transit providers temporarily discontinued service on some routes as demand disappeared. A rough estimate of the impact of COVID-19 is that it reduced ridership by nearly a million from where it would have been otherwise. The total number of passenger trips in SFY 2020 was 4.16 million, a substantial decrease from the 5.12 million trips in SFY 2019.

In SFY 2020 Vermont's public transit systems provided 4.16 million trips. This total is 19% lower than last year's ridership, due to the pandemic.

As a result of the pandemic, this report's analysis of SFY 2020 was split into two periods: July through February and March through June. The evaluative portion of the report applies only to the first period; performance data on the second, pandemic-affected period, are included for information only.

As of this writing (December 2020), transit ridership is still well below pre-pandemic levels and is likely to remain so for all of SFY 2021. In normal circumstances, when routes are shown to be underperforming through the analysis in this report, VTrans works proactively with the subject public transit provider to determine what, if any, strategies may result in increased performance for the route. In the current climate, this type of effort will likely need to wait until the pandemic is over and travel patterns have begun to return to "normal."

INTRODUCTION

The Route Performance Report (RPR) is developed annually to document the performance of public transit services all over Vermont. The results are presented to the Vermont Legislature as part of VTrans' consolidated transportation system and activities report to the House and Senate Committees on Transportation. The Vermont Agency of Transportation's Policy, Planning, and Intermodal Development (PPAID) Division, specifically the Public Transit Section, is responsible for managing the state's public transit program. This report documents the Public Transit Section's monitoring efforts to ensure that public investment in transit is well spent.

Vermont's transit agencies have undergone some organizational changes in the last few years. On July 1, 2017, ACTR and STSI formally merged and now operate under the name Tri-Valley Transit (TVT). Services in the Middlebury region are shown as TVT-ACTR and the services in the Randolph region are shown as TVT-Stagecoach. In this report, SEVT continues to operate two divisions, The MOOver and The Current. Individual bus routes continue to be labeled with their divisional names. However, demand response services and overall financial data for TVT and SEVT are considered as wholes, rather than being separated into the two divisions. Green Mountain Transit continues to be considered as two separate divisions; GMT-Urban and GMT-Rural. This distinction reflects the urban/rural split in the Federal Transit Administration (FTA) program. VTrans authorizes GMT-Urban to be a direct recipient of funds from the FTA, whereas VTrans maintains oversight responsibility for the GMT-Rural division. Finally, in January 2018, SEVT ceased operating non-emergency medical transportation (NEMT), more commonly known as Medicaid transportation. NEMT service in Windham County was taken over by GMCN and service in southern Windsor County was taken over by MVRTD.

In addition to the seven transit systems in Vermont, this performance evaluation covers the volunteer driver services provided by VABVI and the intercity bus services provided by Greyhound and Vermont Translines. Only the intercity routes that receive financial assistance from VTrans are included in this report. Other intercity services (e.g., Megabus, Yankee Trails, and Greyhound's Montreal to Boston route) operate in Vermont and cover their costs through fare revenue, arguably making them the most productive transit routes in the state. However, the private carriers do not provide data on these routes to VTrans.

METHODOLOGY OVERVIEW

VTrans conducts monitoring of transit services by evaluating statewide trends as well as route-level performance. Several data sources were used to develop this annual report:

- The transit systems provide route-level performance data to VTrans in §5311 – Rural Transit Program Monthly Service Indicator Reports (SIRs).
- VTrans collects data on all demand response programs from the transit providers annually.
- VTrans monitors operating budget data by funding source (federal, state, and local) in its grant tracking spreadsheets, and the transit systems provide their profit and loss statements to analyze local share.
- GMT-Urban's route statistics and budget data were provided directly by GMT.

- In order to calculate operating costs more precisely and consistently at the route level, the transit systems provided operating cost information broken down in such a way to allow for the development of two-point cost models (see further discussion below).

VTrans groups public transit routes and services throughout the state in eight categories, described below. Prior to SFY 2019, there had been nine categories, but a significant change was made last year, merging the Volunteer Driver category into the Demand Response category. This change was made for several reasons, all related to the concept of having the data in the RPR be a comprehensive summary of all public transit activity in Vermont. Before 2019, the Volunteer Driver category included trips and administrative costs associated with all funding programs (of which E&D and NEMT were by far the largest), but it excluded the *mileage* costs associated with the trips and thus did not represent the full cost of providing that service. Meanwhile, the Demand Response category excluded NEMT trips provided on agency vans and taxis and also excluded all ADA complementary paratransit trips. The majority of ADA paratransit trips are provided in Chittenden County, but they also occur in Rutland, Brattleboro and the Upper Valley. The rationale for excluding ADA paratransit was that they are required to be provided by law and thus the operators should not be held to particular standards for efficiency or cost effectiveness. There was no rationale for excluding NEMT trips on vans; it was just a vestige of them not having been included when the process was developed in the early 2000s.

Based on recommendations in the 2020 Public Transit Policy Plan (PTPP), the primary method of evaluating route performance has changed from prior years. Rather than using two separate route evaluation measures—productivity and cost-effectiveness—this report focuses just on the latter measure to determine the performance of a route. Basing the rating on just the net cost per passenger trip simplifies the evaluation and avoids cases where a given route might have been underperforming on one measure but satisfactory on the other measure. Ultimately, the cost borne by the taxpayer for a ride taken on a transit vehicle is the most relevant measure of the performance of that transit service.

With the sole focus of the evaluation on cost effectiveness, VTrans determined that it was worthwhile to ensure greater consistency across providers and greater precision at the route level in the estimation of operating costs. In prior years, each provider calculated costs at the route level and reported them through its monthly service indicator reports. These reports did not include detail on how the costs were calculated, but most operators seemed to be using a "single-point" cost model based on vehicle hours of service. That is, the agency calculated its total bus and van operating cost, divided by the total bus and van vehicle hours to determine an hourly rate, and then used that rate to estimate the costs at the route level.

For this report, the analysis team requested financial information from each provider to be able to divide operating costs into three main categories: mileage-related costs, costs associated with volunteer driver or taxi service, and all other costs. Mileage-related costs include fuel, parts and other maintenance labor and expenses. Volunteer driver and taxi costs include mileage reimbursement and the administrative labor needed to schedule and dispatch volunteer and taxi trips. Other costs include all driver and administrative labor and associated fringe benefits, as well as other overhead costs. This information, in conjunction with other data on the number of revenue miles and revenue hours operated, allowed the team to estimate a "two-point" cost model for each provider with separate rates for vehicle mileage and vehicle hours.

The two-point models were then applied to each route to re-estimate the total operating cost. The impact of this was generally to increase the costs for commuter and longer-distance routes relative to local routes, as the former accumulate many more miles and thus generate higher maintenance costs. Because this model was based on *revenue* miles and hours, it did not account for large differences among non-revenue service (trips from and back to the garage to the beginning and end of revenue service). For a few routes that are known to have large amounts of non-revenue miles and hours, adjustments were made to costs to reflect this situation. In future years, the total vehicle miles and hours may be used as the basis for the cost estimates.

The other significant change in the evaluation method is that the "acceptable" and "successful" thresholds are no longer based on national peer groups, but rather on a comparison to the average of the routes or services in that class. For each class, the acceptable net cost per passenger was set equal to 1.5 times the class average, and the successful net cost per passenger was set equal to two thirds of the class average. Thus, any route with a net cost per passenger between 66% and 150% of the class average is considered acceptable, while those with costs below 66% of the average are successful and those with high costs or more than 150% of the average are underperforming.

To preserve continuity with past reports, this report includes (in Appendix A) analysis of both ridership and cost *efficiency*, comparing Vermont routes to sets of national peers. Ridership efficiency is the same as productivity (riders per unit of service) and cost efficiency is the gross operating cost per unit of service. For most categories, these efficiency measures are based on the vehicle revenue hour of service, thus measuring the number of people who boarded and the cost to operate during each hour that a bus, van, or car was operating in service. The exceptions to this are the Urban category, in which efficiency is measured in boardings and cost per vehicle revenue mile, and the Express Commuter and Intercity categories, in which efficiency is measured in boardings and cost per vehicle trip. Routes in urban areas tend to travel more slowly than rural or small town routes, due to higher levels of congestion, and so measuring based on miles does not "penalize" an operator for running a route in areas with more traffic. Express commuter and intercity trips tend to have little passenger turnover during the trip (in the inbound direction, people tend to get on at stops along the way and then all get off at the final terminal), and so the capacity of the vehicle limits the number of people who can board.

Peer groups were established for each category and then the peer average ridership and cost efficiency was calculated. For the Urban, Tourism, Express Commuter and Rural Commuter categories, the peer groups consisted of agencies selected in prior years whose statistics were updated, while for other categories, new sets of peers were chosen based on their similarity in overall operational size to the Vermont operators. The calculated averages were based on the most recent available data from the National Transit Database (report year 2019). As stated above, the peer averages are not evaluation thresholds, but rather serve as reference points to compare the productivity and cost of Vermont services to those of similar operations around the US.

Transit Service Categories

The service category descriptions below serve as guidelines; some routes or services may not fit every description perfectly. VTrans may also consider ridership and cost data to group similar services together.

1) **Urban**: Routes operating primarily in an urbanized area with all-day, year-round service. The city served by the route has a population of at least 17,500 people and high-density development.
2) **Small Town**: Routes operating in towns with 7,500 to 17,500 people with all-day, year-round service. The route typically stays within one town or two adjoining towns and does not run through long stretches of rural areas.
3) **Demand Response**: Primarily service that does not operate on a fixed schedule nor on a fixed route; also includes routes that might otherwise fit in the "Rural" category but operate less than once a day (i.e., shopper service operates only once a week or a few times a month). This category includes all NEMT service in Vermont, ADA complementary paratransit service, trips brokered to taxi services, and trips operated by volunteer drivers. Volunteer drivers use their own vehicles, donate their time to transport riders, and are eligible to receive reimbursement for mileage at the IRS-approved rate.
4) **Rural**: Routes operating in towns with fewer than 7,500 people or connecting two small towns running through undeveloped areas. These routes operate year-round with daily service, but the frequency may be low (more than one hour between trips).
5) **Rural Commuter:** Routes that are similar to the Rural category above but operate primarily during peak commute periods. These routes usually connect several small towns or villages with intermediate stops and operate primarily on state routes in rural areas. Some routes connect outlying areas to the nearby city, with a significant portion of the mileage in rural areas.
6) **Express Commuter**: Routes that operate primarily during peak commute periods and often include express segments. These routes are characterized by one-directional ridership (in most cases), longer route lengths, and serve either of the two largest employment centers in the region: the core of Chittenden County or the Upper Valley area spanning Vermont and New Hampshire. These routes primarily travel on interstate highways and provide limited stops, often serving park and ride lots and major employers (rather than other local destinations).
7) **Tourism**: Seasonal routes that serve a specific tourist trip generator, such as a ski area.
8) **Intercity**: Routes operating regularly scheduled, fixed route, and limited stop service that connects places not in close proximity and makes meaningful connections to the larger intercity network.

The list of routes and services in each category is not identical to SFY 2019. The Bradford Circulator, operated by TVT-STSI was included within Demand Response last year, but is treated as a Rural route this year, as it offers daily service on a published schedule. The 89er South Expansion service was classified as Express Commuter last year, but the service actually fits better as a rural commuter, as the route serves as a rural feeder to the regular 89er route. The 15/14 Commuter route operated by RCT is a new service connecting Hardwick to Barre. The College Street Shuttle, operated by GMT is now known as the Waterfront/Airport route after it was extended from the UVM Medical Center to Burlington International Airport. Other GMT-Urban routes are still referred to by their traditional names rather than the color scheme introduced by the NextGen planning study.

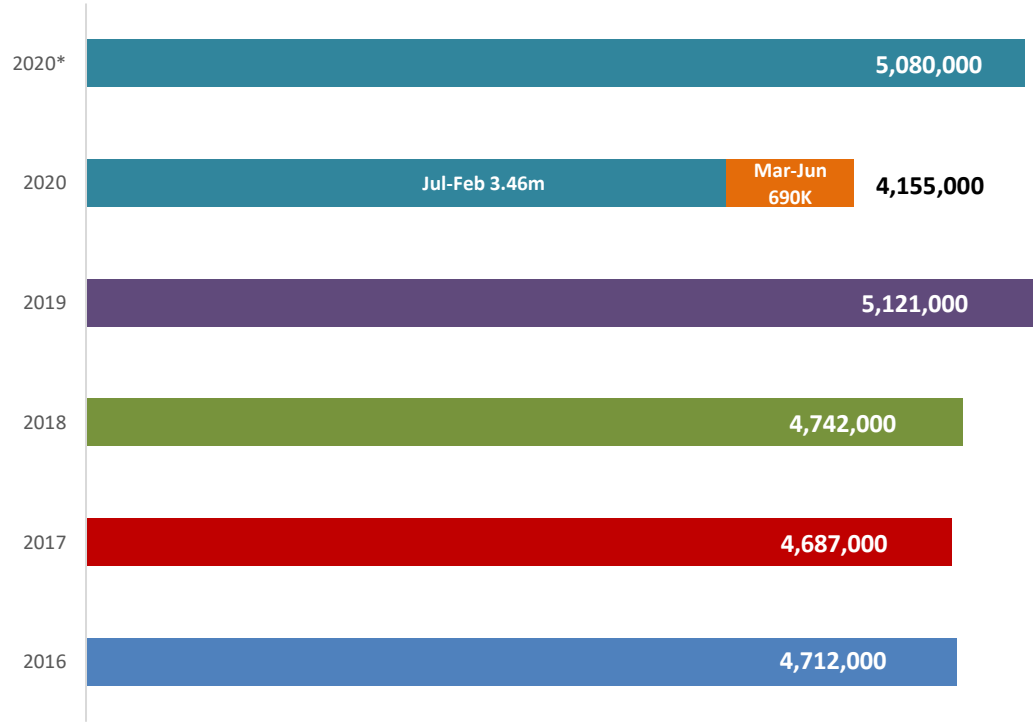
STATEWIDE TRENDS

This section describes the trends in Vermont's transit ridership and costs in recent years, before delving into route-level performance in the next section.

Transit Ridership

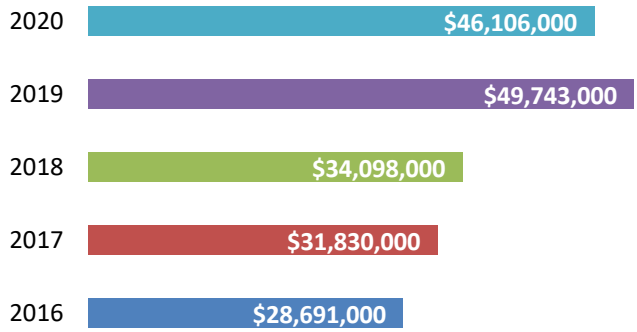
In SFY 2020 Vermont's public transit systems provided 4.16 million trips. Of course, it is impossible to talk about 2020 without recognizing the impact of the COVID-19 pandemic. As shown in Figure 2, the pandemic likely reduced ridership by nearly a million from what it would have been otherwise. The July through February period indicated that the annual total would have come close to the total from SFY 19, but then in March, ridership dropped steeply on all transit services, with some of them losing 70% or more of their riders. Patronage began to recover during the summer, but no system, even at the end of calendar year 2020, has yet to return to pre-pandemic ridership levels.
As is true every year, a little under half of Vermont's transit trips occur in the Chittenden County region. With the effect of the pandemic, it is difficult to analyze year-over-year changes by type of transit service, though it appeared that Small Town and Rural routes were trending toward exceeding their SFY 19 figures, while Demand Response and Tourism services were likely to serve fewer passengers.

Figure 2: Statewide Ridership



*Represents theoretical FY20 ridership without pandemic

Figure 3: Total Operating Costs



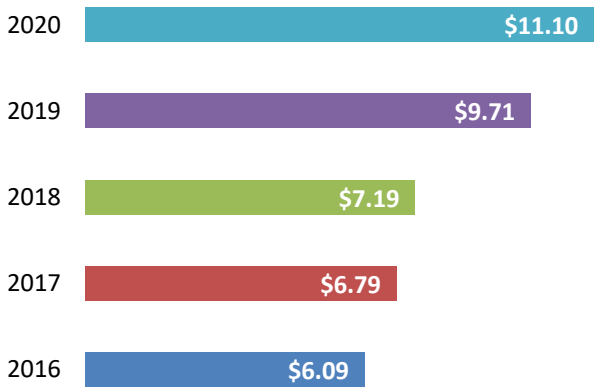
Transit Costs

In SFY 2020 transit operating costs totaled $46.1 million, a 7% decrease from SFY 19 (see Figure 3). The decrease is mainly due to a $3 million drop in Demand Response costs resulting from the steep decrease in travel demand during the pandemic. The Intercity and Small Town categories each saw reductions in cost of more than $600,000 due to pandemic-related service cuts. The Chittenden County region accounted for one third of the total costs. As noted in the SFY 19 report, the large increase in cost between SFY 18 and SFY 19 was due to a broadening of the definition of the Demand Response category rather than a major increase in unit costs.

Cost per Trip

In SFY 2020 the average cost for a transit trip in Vermont was $11.10, an increase of 14% from the prior year (see Figure 4). The cost per trip, which had jumped in SFY 19 due to the expansion of the Demand Response category to include all NEMT trips and ADA paratransit, as well as the inclusion of mileage reimbursement costs for the first time, jumped again mainly due to the pandemic. While annual ridership dropped 19%, costs only dropped by 7%. Most bus routes continued to operate in the March through June period, but with far fewer riders aboard.

FIgure 4: Cost per Trip



RESULTS BY SERVICE CATEGORY

Vermont's transit systems provide an array of services to meet various markets and needs. The Urban service category generates the highest share of ridership statewide, followed by Small Town and Demand Response. The percentage shares of ridership in SFY 2020 were all within one percentage point of the shares from SFY 2019. All route classes suffered ridership losses, but the steepest losses in percentage terms were in Intercity Bus, Express Commuter and Demand Response. The Governor's stay-at-home order and the more severe virus outbreaks in neighboring states devastated the market for intercity bus travel. Many riders on Express Commuter routes shifted to working at home; those who still had to report to a workplace mostly chose to drive. Indeed, during the first wave of the pandemic in the spring, all transit agencies were encouraging people NOT to ride the bus unless they had to.

The route classes with the smallest percentage declines were Rural, Small Town, and Tourism. Compared to commuter services, Rural and Small Town routes were already serving a higher percentage of riders who had no other travel options. The ski season was nearly complete when the pandemic hit, and so the losses for Tourism routes were comparatively smaller than for other classes. Figure 5 illustrates FY 2020 ridership by service category. Figure 6 shows the operating costs per service category as a percentage of statewide costs in SFY 2020.

Figure 5: Transit Ridership by Service Category

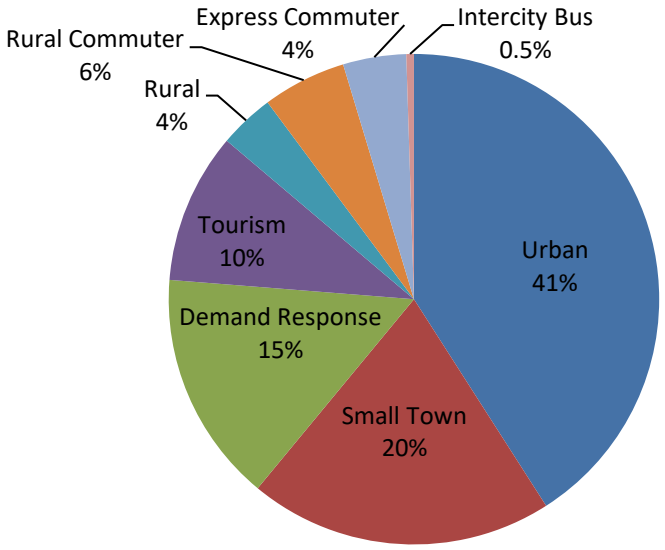
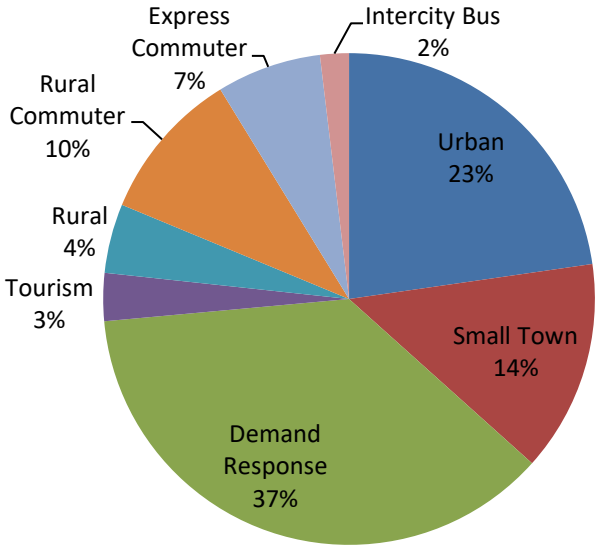


Figure 6: Operating Costs by Service Category

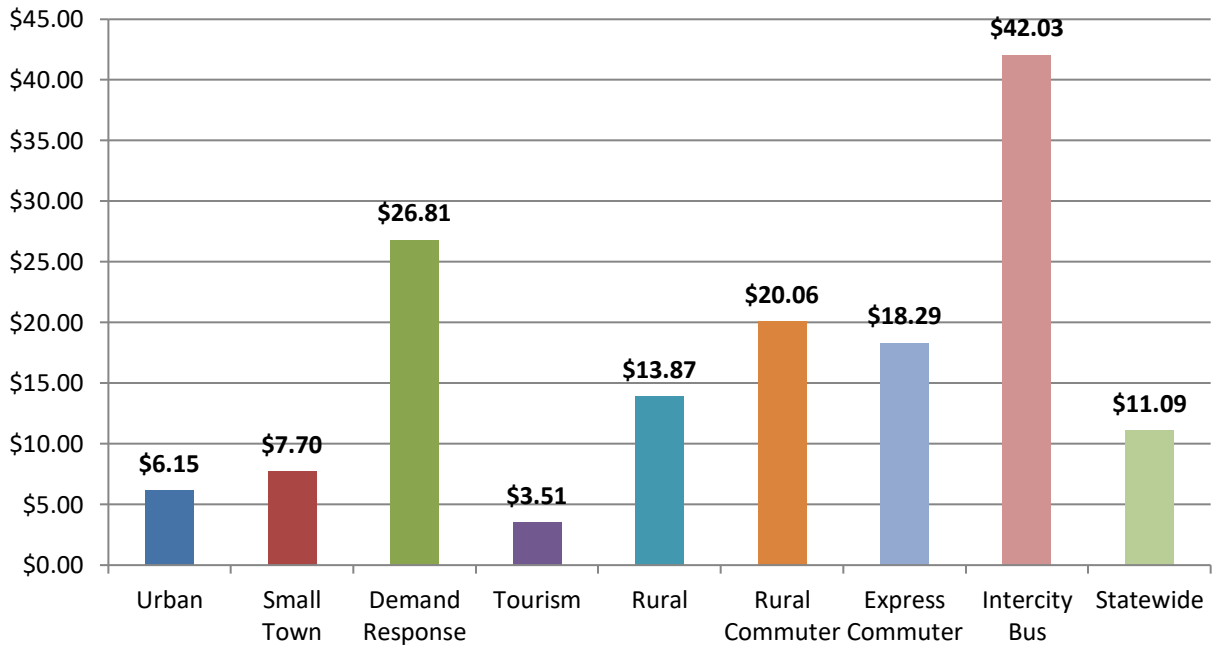


Not surprisingly, Urban service consumes a smaller percentage of the total cost compared to its share of the total ridership, because urban bus routes, which can carry 40 people or more on some

trips, are more cost-effective on a per passenger basis. In contrast, Demand Response service consumes 37% of the total cost but only accounts for 15% of the total riders. This reflects the fact that many demand response trips are carrying one person, or at most a few people, at a time. Rural Commuter, Express Commuter and Intercity Bus all consume greater shares of the cost than of the ridership because these trips are generally longer and thus more costly than local trips in an urban or small town area.

These differences in the cost per trip by mode are shown more explicitly in Figure 7. Urban, Small Town and Tourism had a cost per trip that was lower than the statewide average. Tourism trips tend to have the lowest cost because most of the routes are very short (connecting parking lots and condos to ski lodges) and generally well used. Intercity Bus and Demand Response are the most expensive types of service on a per trip basis. Intercity trips are the longest trips operated among all of the services, and thus would be expected to be relatively expensive. Demand Response trips would be even more expensive were it not for the fact that nearly half of all such trips were operated by volunteer drivers who were paid only for the mileage they accumulated and nothing for their time.

Figure 7: Cost per Trip by Service Category



LOCAL SHARE

The Public Transit Section also examines the transit providers' performance in generating local revenue. The Vermont Public Transit Policy Plan establishes a statewide goal that 20% of the funds for public transportation should be generated locally. This is a broad interpretation of local funding to include fare revenue, contributions from individuals, contracts with outside agencies, and payments from cities and towns.[1] In other words, local share refers to the percentage of transit

[1] The federal definition of local match for FTA funds excludes fare revenue from the calculation but includes state operating assistance.

expenses that are *not* covered by the Federal Transit Administration, the Federal Highway Administration, or the State (and excludes State funding for capital, Rideshare, RTAP, JARC, and Medicaid).

Figure 8 displays the local share of transit operating budgets statewide in SFY 2020, based on actual operating expenses from VTrans' grant tracking spreadsheets. The local share analysis found that 21% of transit funding statewide comes from local sources including fares. Excluding GMT-Urban, the largest generator of fare revenue, the local share of transit budgets outside of Chittenden County was under the 20% target, dropping from 17% last year to 11%. Much of this drop is attributable to funding from the CARES Act, the emergency legislation for pandemic relief, which provided extra federal funding with zero match requirement.

The available resources and partnerships that transit providers rely on for public transportation funding vary widely and include municipal contributions, business sponsors, institutional partners, contracts with human service agencies, in-kind match from volunteer driver programs, advertising, donations, and fares. VTrans provides flexibility to the transit providers in using various sources of local revenue to complement state and federal funding.

Figure 8: Local Share

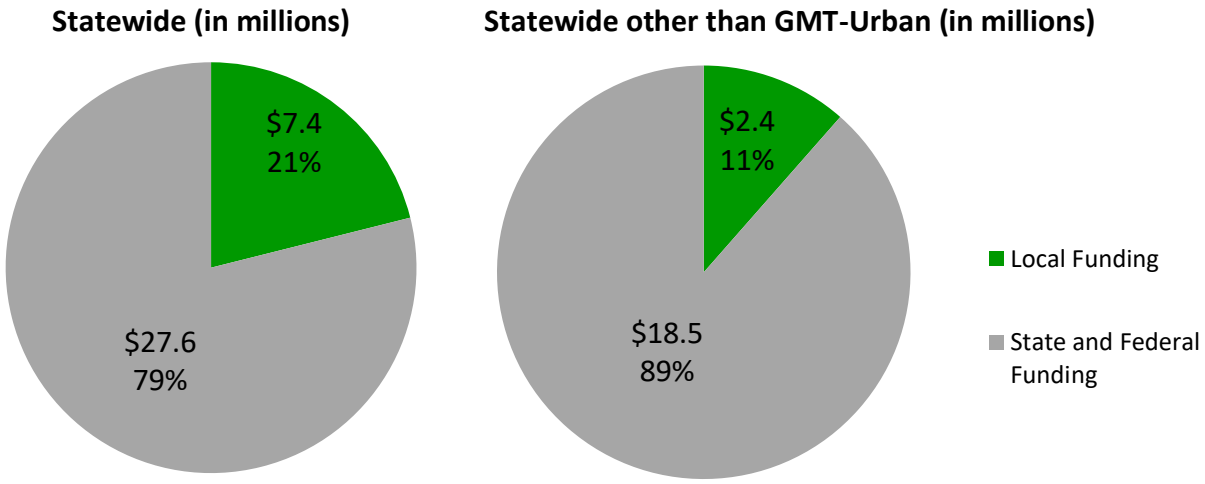
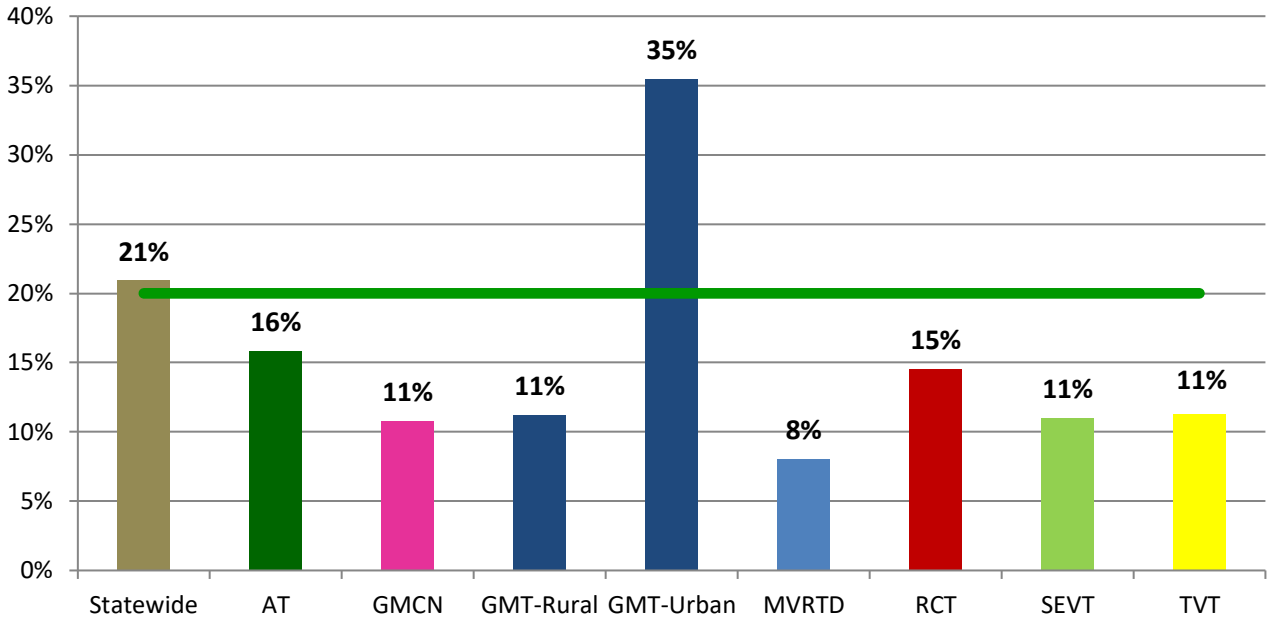


Figure 9 on the next page illustrates the local share percentage by transit system in SFY 2020, in comparison with the state's 20% goal. Local share was calculated as total non-state and non-federal funding divided by total operating expense. Only GMT-Urban exceeded the 20% local share target. Advance Transit usually exceeds the target, but because of the CARES funding and a grant for new service with a lower match requirement, its local share dropped from 29% in SFY 19 to 16%. Several other agencies that were close to the 20% goal last year were well below the goal this year, again, mainly due to the impact of the CARES funding.

Figure 9: SFY 2020 Local Share by Transit System



Note: SEVT's local share percentage includes some resort routes that are fully funded by local dollars.

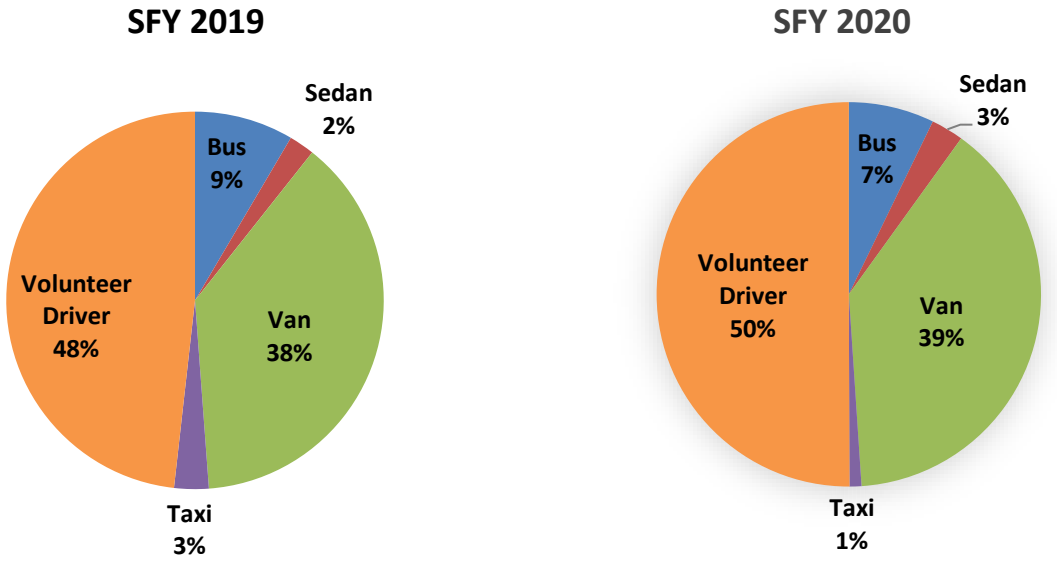
ELDERS AND PERSONS WITH DISABILITIES (E&D) TRANSPORTATION PROGRAM

FTA's §5310 program is targeted toward seniors (people 60 and older) and people with disabilities. The E&D Program, as it is commonly known, is used in most parts of the country to finance the purchase of accessible vans and buses. In Vermont the scope of the E&D Program has been expanded incorporating funds from the §5311 (non-urban) program to help pay for administrative and preventive maintenance costs.

In SFY20, the total amount spent on the E&D program in Vermont was $4.72 million, 80% of which ($3.8 million) was federal money. Overall, E&D ridership was down from last year due to the pandemic, with about 151,000 trips carried compared to 200,000 in SFY 19. Green Mountain Transit (GMT) with its partners Special Services Transportation Agency in Chittenden County and CIDER in Grand Isle County accounted for the largest share at about 29% of the total. Tri-Valley Transit (TVT), with its partner Elderly Services, Inc. accounted for the second largest share at 23%. The cost per passenger trip ranged from about $24 at Marble Valley in Rutland, to about $41 at Southeast Vermont Transit and Rural Community Transportation.

Trips funded through the E&D Program are provided across many modes as shown in Figure 10. In SFY 2020, 7% of E&D trips were provided on bus routes, 39% in vans, and, most importantly, 50% in private cars operated by volunteer drivers. These figures represent a small shift from buses to vans and volunteer drivers compared to last year.

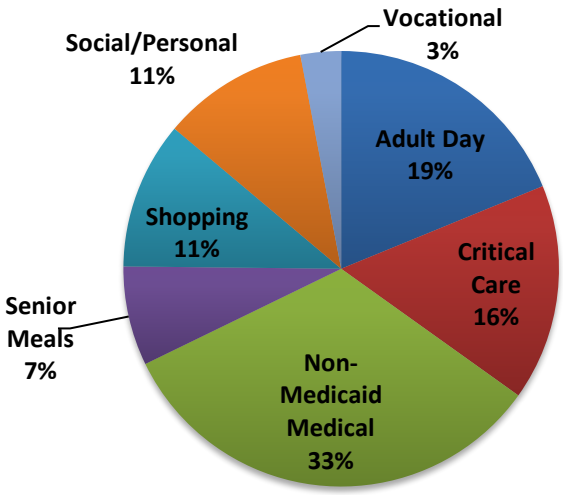
Figure 10: E&D Trips by Mode



Volunteer driver trips cost less per passenger trip than vans and can provide a more personalized service to seniors and persons with disabilities, some of whom are traveling long distances (including to neighboring states) for medical services and other needs. Volunteer drivers are especially important to mobility in large rural areas, where the population is thinly distributed, such as the Northeast Kingdom. However, in places where bus service is available, having E&D passengers use the bus routes is the most cost-effective means of travel.

Figure 11 displays the percentages of E&D trips by trip purpose in SFY 2020. Some 49% of E&D trips transport people to medical appointments and critical care services such as dialysis and cancer treatments. About a quarter of E&D trips are used to access adult day programs and senior meals. Compared to the prior year, the portion of E&D trips for medical trips increased, while the portion for adult day/meals decreased. It is likely that many adult day and meals programs shut down during the pandemic. The percentage of shopping and social/personal trips each increased slightly.

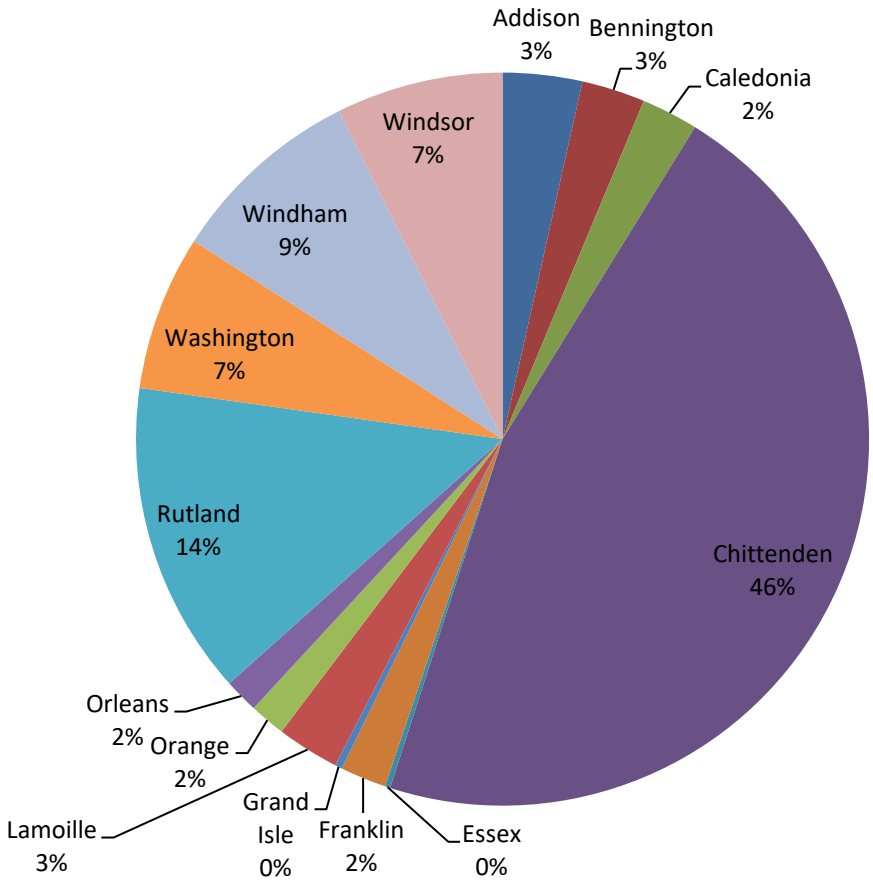
Figure 11: E&D Trips by Purpose in SFY 2020



COUNTY-LEVEL STATISTICS

Reflecting overall population by county, public transit boardings by county show one large county (Chittenden), accounting for nearly half of transit trips, four medium-size counties accounting for between 7% and 14% of trips, seven small counties with between 2% and 4% of trips, and two tiny counties with less than 1% of of the statewide total. The breakdown of public transit trips by county of origin in SFY 2020 is presented in Figure 12.

Figure 12: Public Transit Trips by County of Origin in SFY 2020



ROUTE-LEVEL PERFORMANCE

Based on recommendations in the 2020 Public Transit Policy Plan, the Public Transit Section evaluates Vermont's transit services by their cost-effectiveness. Prior to 2020, both productivity and cost-effectiveness were used to evaluate routes, but as described earlier, the evaluation method was changed to focus on cost-effectiveness, while retaining productivity and cost-efficiency as reference measures to compare to national peer groups. For the evaluation, all transit services in the state are grouped by service category and evaluated against the average performance in that category. It is important to reiterate that the evaluation for SFY 2020 applied only to the pre-pandemic period of July 2019 through February 2020.

Methodology for Developing Performance Standards

As mentioned in the methodology overview, the definition of the performance standard was changed from prior years. Since 2007, the performance standard for each service category has been based on a set of national peers, with performance data drawn from the National Transit Database. Routes that performed better than the peer averages were considered successful and those that performed at least as half as well as the peers were considered acceptable.

For the pre-pandemic period of SFY 2020 (July 2019 through February 2020) the cost effectiveness of each route or service was calculated by taking the gross operating cost, subtracting out any fare revenue and then dividing by the number of boardings. The resulting figure is the net cost per passenger, which is equal to the public subsidy of that trip. Prior reports had considered only the gross cost per passenger.

The "Successful" standard for each service category was 66.6% of the category average and the "Acceptable" standard was 150% of the class average. For Intercity Bus, the "Successful" standard was the measure set out in the solicitation for bus service in 2014 and "Acceptable" was twice that measure.

Table 1 summarizes the SFY 2020 performance standards by category. The standards from SFY 2019 (which were for gross cost, not net cost) are shown for reference. In general, the standards are more stringent in SFY 2020, but this is to some extent a reflection of the change from gross cost to net cost, since the net cost per passenger is always equal to or less than the gross cost. For Demand Response and Express Commuter, the Acceptable standard is "looser" than last year, and for Rural service, it is very close.

Table 1: SFY 2020 Performance Standards Compared to SFY 2019

	"Successful" Cost-Effectiveness Standard		"Acceptable" Cost-Effectiveness Standard	
Service Category	**2020**	**2019**	**2020**	**2019**
Urban	$3.83	$5.56	$8.62	$11.12
Small Town	$5.81	$9.73	$13.08	$19.46
Demand Response	$18.78	$20.41	$42.26	$40.82
Tourism	$3.14	$6.90	$7.06	$13.80
Rural	$12.59	$14.62	$28.34	$29.24
Rural Commuter	$12.65	$20.14	$28.45	$40.28
Express Commuter	$15.26	$13.40	$34.33	$26.80
Intercity	$30.00	$30.00	$60.00	$60.00

Route Evaluation Results

Given the way the standards were set, the vast majority (86%) of the 119 transit services evaluated across the state met the Acceptable standards for cost-effectiveness. A sizable portion (28%) of the state's transit routes were considered Successful, thus leaving 58% in the acceptable-but-not-successful group.

Improved Transit Routes

Three routes moved from underperforming to acceptable performance in cost-effectiveness since SFY 2019:

- In the Small Town category, GMT-Rural's Capital Shuttle service improved because it operated only as a seasonal service, rather than year-round as it had done previously. Demand for the shuttle is much stronger during the legislative session. Note that the Capital Shuttle will not operate in SFY 2021 as it is part of the service being replaced by the pilot microtransit service called MyRide by GMT.

- In the Express Commuter category, GMT-Urban's Barre LINK Express saw increased ridership, reducing the cost per passenger to within the Acceptable threshold.

- In the Intercity category, the Vermont Shires Connector drew enough new ridership to have cost-effectiveness barely within the Acceptable threshold.

Underperforming Transit Services

Statewide, 16 transit services did not meet the Acceptable thresholds for cost-effectiveness.[2] Eleven of these services underperformed for the first time:

- AT: Yellow (CMAQ Y1)
- GMT-Rural: Valley Evening Service
- GMT-Rural: Valley Floor
- SEVT-Current: Brattleboro Blue Line
- SEVT-Current: Bellows Falls-Springfield
- SEVT-Current: Okemo Seasonal
- TVT: Bradford Circulator
- TVT: 89er North
- RCT: Littleton
- RCT: 15/14 Commuter (CMAQ Y1)
- VABVI: Demand Response

Two of these services were new in SFY 20: Advance Transit's Yellow Route and RCT's 15/14 Commuter. It is typical for new services to underperform in their first year as riders only gradually become aware of the new connections available. Several others in this group are Rural Commuter routes. The standard for this category dropped from $40.28 to $28.45 and at the same time, the new cost model tended to allocate more of an agency's overall cost to its commuter routes, as they accumulate more mileage than local routes. This combination of factors affected the Okemo

[2] Technically, the ADA paratransit service operated by Advance Transit also underperformed with regard to cost effectiveness. Because of the change in the scope of the Demand Response category, this service only started being included in the Route Performance Report in SFY 19. Unlike other agencies that have a mix of demand response data, ADA paratransit is the only type of demand response service operated by AT. The regulations regarding ADA service limit the ability of AT to schedule these trips in a cost-efficient way, and AT does not have the possibility of coordinating them with other demand response service, as other agencies do, since it does not operate E&D or Medicaid service.

Seasonal, 89er North, and Littleton routes. GMT's Valley Evening Service has been discontinued, while the Valley Floor service underperformed because the Tourism cost-effectiveness standard is much more stringent this year (dropping by nearly 50%). The Brattleboro Blue Line underwent a major restructuring in October 2018; while its cost-effectiveness was acceptable in SFY 19, the more stringent standard this year puts it in the underperforming category. The Bradford Circulator was considered part of TVT's Demand Response service in prior years, so it is being considered on its own for the first time this year. Finally, VABVI's Demand Response service reported costs differently from prior years. Given the size of its operation, it is difficult to coordinate trips among different riders and thereby achieve better cost-effectiveness.

Table 2 lists the services that have been underperforming for at least two consecutive years. The Williston/Essex route has been restructured in SFY 21 to include the Essex Center loop. The 89er Barre Express route has been discontinued.

Table 2: Underperforming Services

Service Category	Route	Years Underperforming
Express Commuter	TVT-Stagecoach: 89er	7
Intercity	Vermont Translines: Route 4	2
Rural Commuter	TVT: 89er Barre Express CMAQ	2
Rural Commuter	TVT: 89er South Expansion CMAQ	2
Urban	GMT-Urban: Williston/Essex	5

Performance Graphs

The next section of the report includes graphs depicting the cost effectiveness of all transit services in Vermont for the period July 2019 through February 2020. For each route, the graph shows the net cost per passenger as a solid color bar and the gross cost per passenger as a gray pattern bar. The performance standards are based on the class averages for net cost per passenger. The standard for Successful performance, equal to the 66% of the class average, is shown on each graph as a green line, while the standard for Acceptable performance, equal to 150% of the class average, is shown as a red line. New transit services, or portions of existing services, which are funded through the CMAQ Program are distinguished by a diagonal line fill in the graphs. Each provider has a specific and consistent color used throughout all of the graphs. Two of the charts, for Small Town and Rural Commuter, are split into two pages because of the large number of routes in those classes.

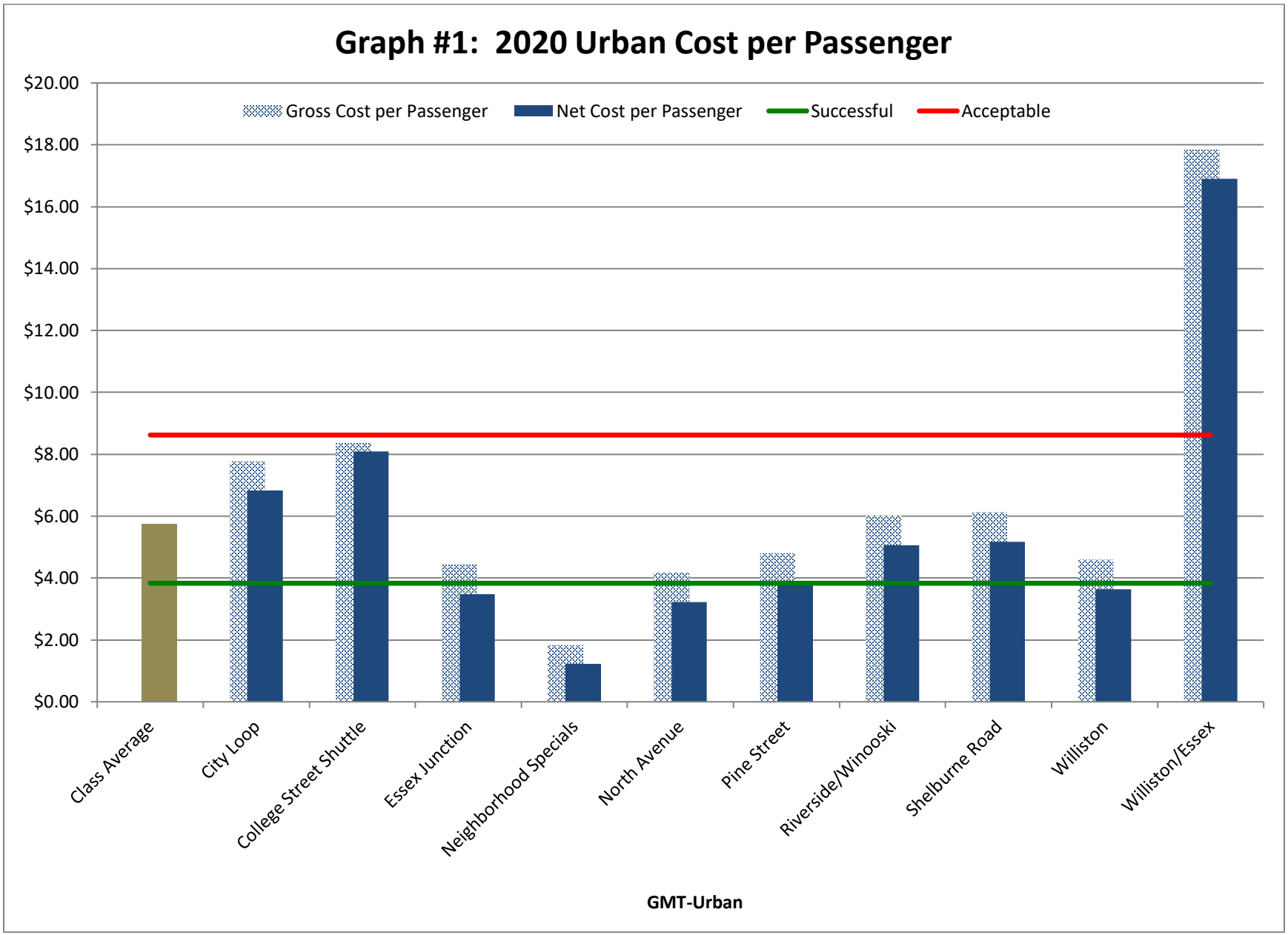
The Demand Response chart is treated a bit differently from the others. The gross cost per passenger is not shown as very few of the demand response services have any fare revenue, so that gross cost and net cost is equal for almost all of them. Secondly, the chart also shows the percentage of demand response trips that are operated by volunteer drivers for each agency through grey dots that refer to the right-hand axis. Dots that appear higher on the chart indicate a greater percentage of trips operated by volunteer drivers. In general, there is an inverse relationship between cost-effectiveness and volunteer percentage, as volunteer trips are typically less costly than those operated by agency drivers. However, there are other important factors affecting cost, such as the average

length of the trips and the density of demand, which can affect how easily an agency can coordinate trips. Thus, GMT-Urban has a lower cost per passenger than GMT-Rural even though GMT-Rural uses volunteer drivers much more often. Demand response trips in the GMT-Urban area tend to be much shorter than those in other areas, and the higher population density in Chittenden County allows for more ride coordination.

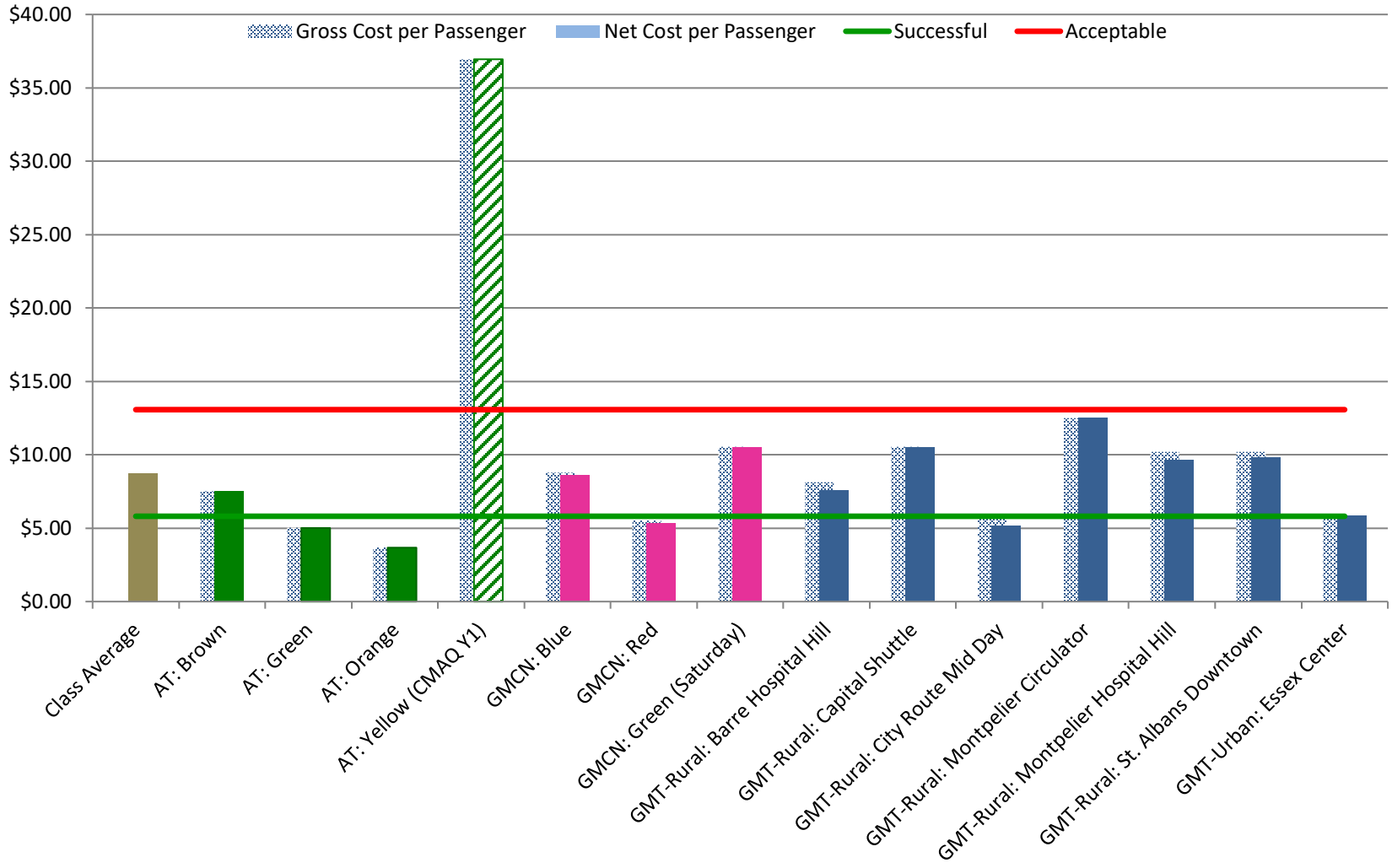
Appendix A contains two additional sets of graphs showing the ridership efficiency (productivity) and cost efficiency of each route. These charts show the statistics for the July–February period and the March–June period in separate bars. These charts also show the average performance of the national peers on these measures. This appendix also includes all of the performance data in a tabular format for easy reference. Appendix B includes charts that portray historical ridership, total operating cost, and cost per trip by transit system/division from SFY 2016 through SFY 2020. Appendix C presents the historical performance for every route or service in Vermont from SFY 2016 through SFY 2020, showing the trends in ridership efficiency, cost efficiency and cost effectiveness.

COST-EFFECTIVENESS PERFORMANCE BY SERVICE CATEGORY

FOR THE PERIOD JULY 2019 THROUGH FEBRUARY 2020

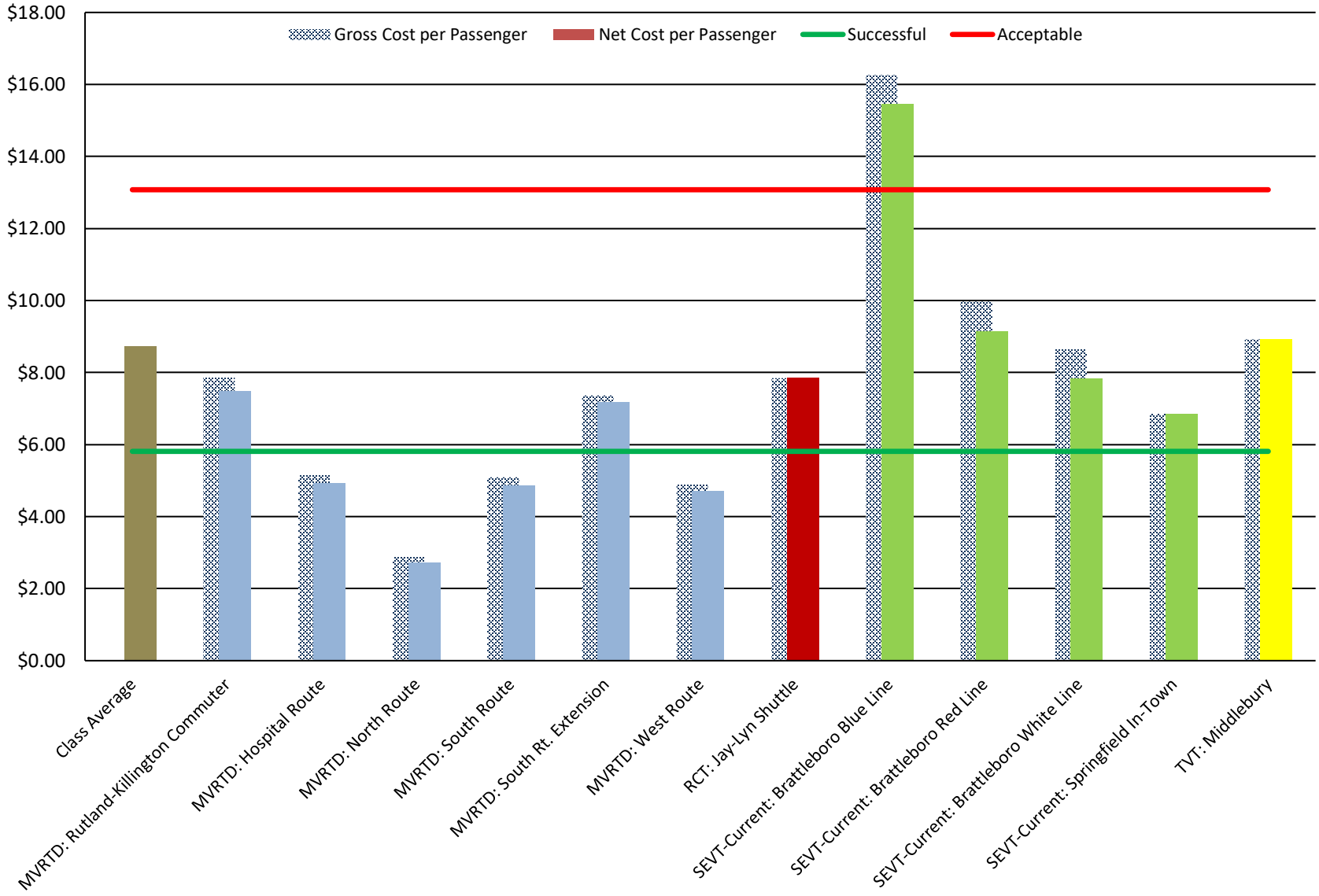

Graph #1: 2020 Urban Cost per Passenger
$20.00
$18.00
$16.00
$14.00
$12.00
$10.00
$8.00
$6.00
$4.00
$2.00
$0.00
Gross Cost per Passenger
Net Cost per Passenger
Successful
Acceptable
Class Average
City Loop
College Street Shuttle
Essex Junction
Neighborhood Specials
North Avenue
Pine Street
Riverside/Winooski
Shelburne Road
Williston
Williston/Essex
GMT-Urban

Graph #2: 2019 Small Town Cost per Passenger (page 1)

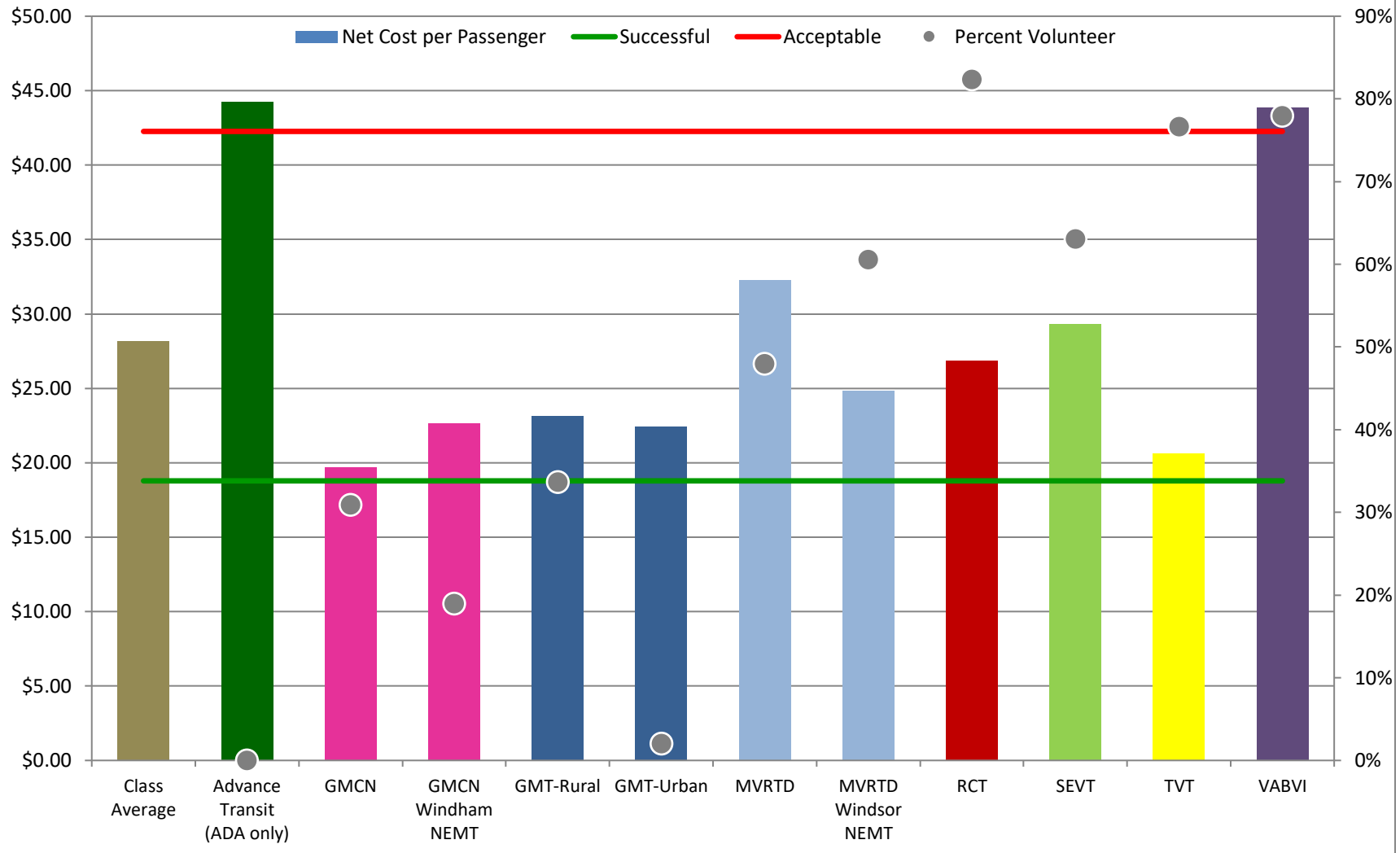


Note: Data for AT routes represent the entire route, even though a portion of the route is in New Hampshire.

Graph #2: 2020 Small Town Cost per Passenger (page 2)

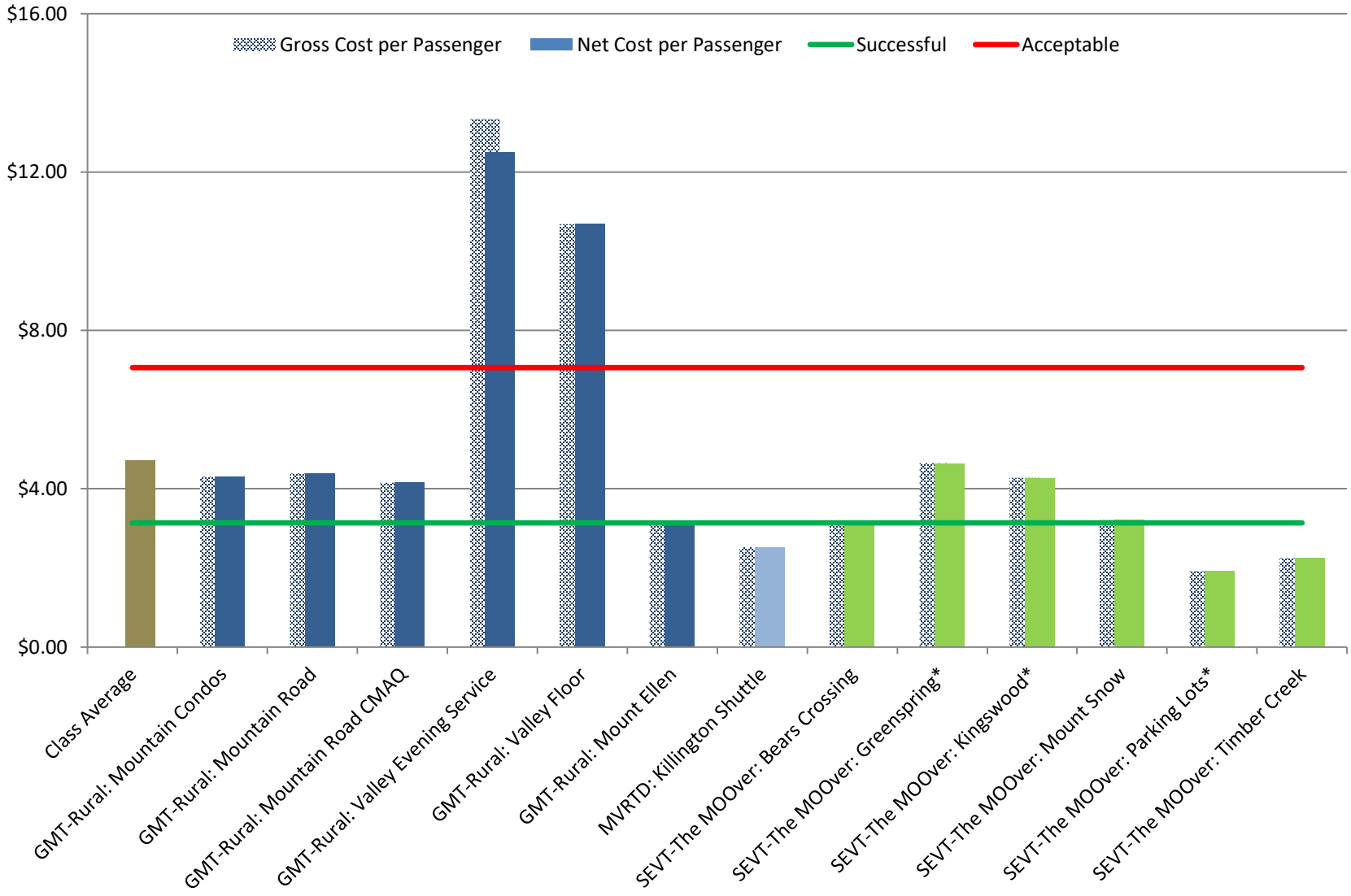


Graph #3: 2020 Demand Response Cost per Passenger



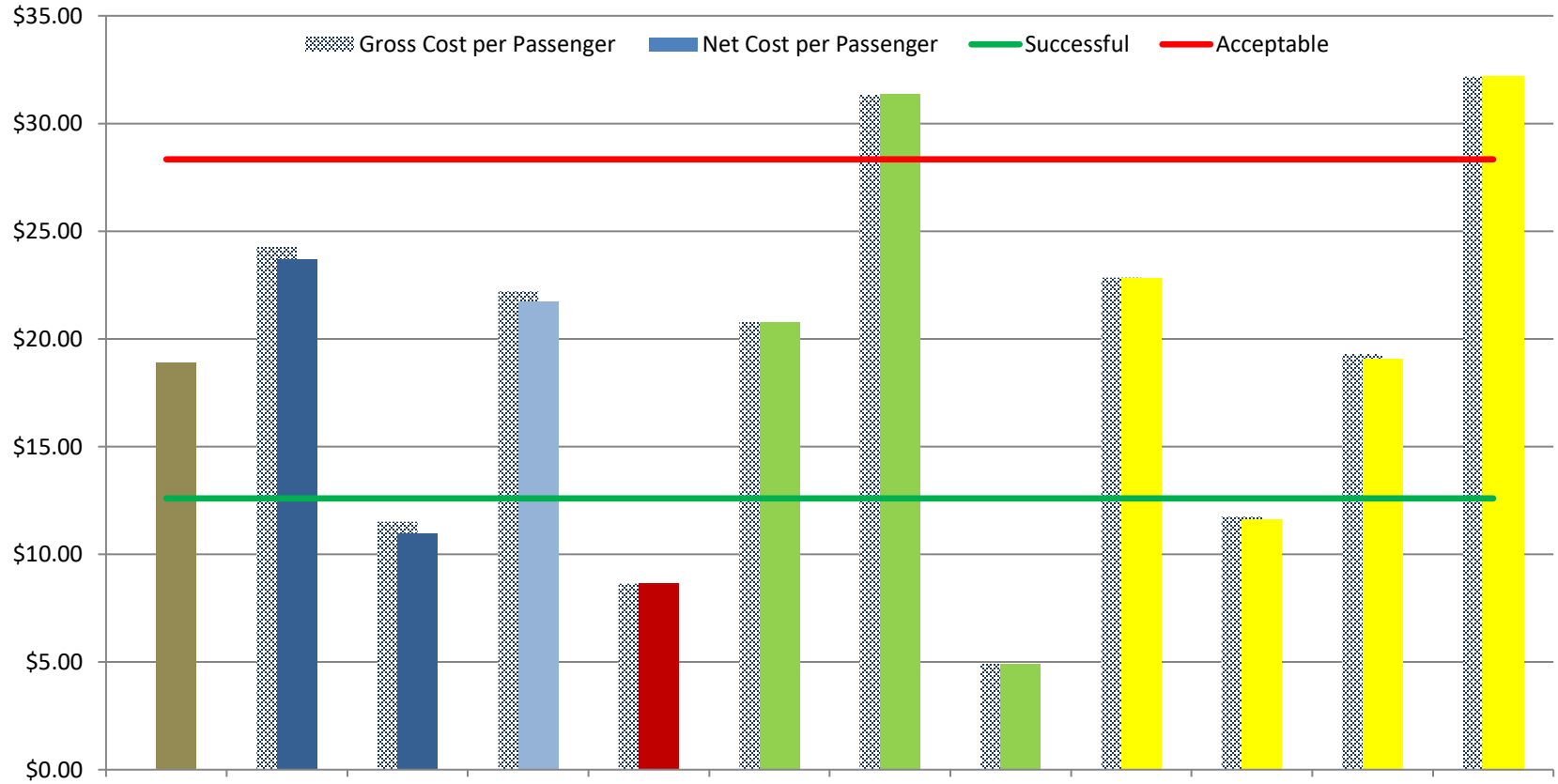
Note: TVT's demand response data includes 10,177 E&D eligible trips provided by Elderly Services, Inc. for free with vehicles leased from TVT.

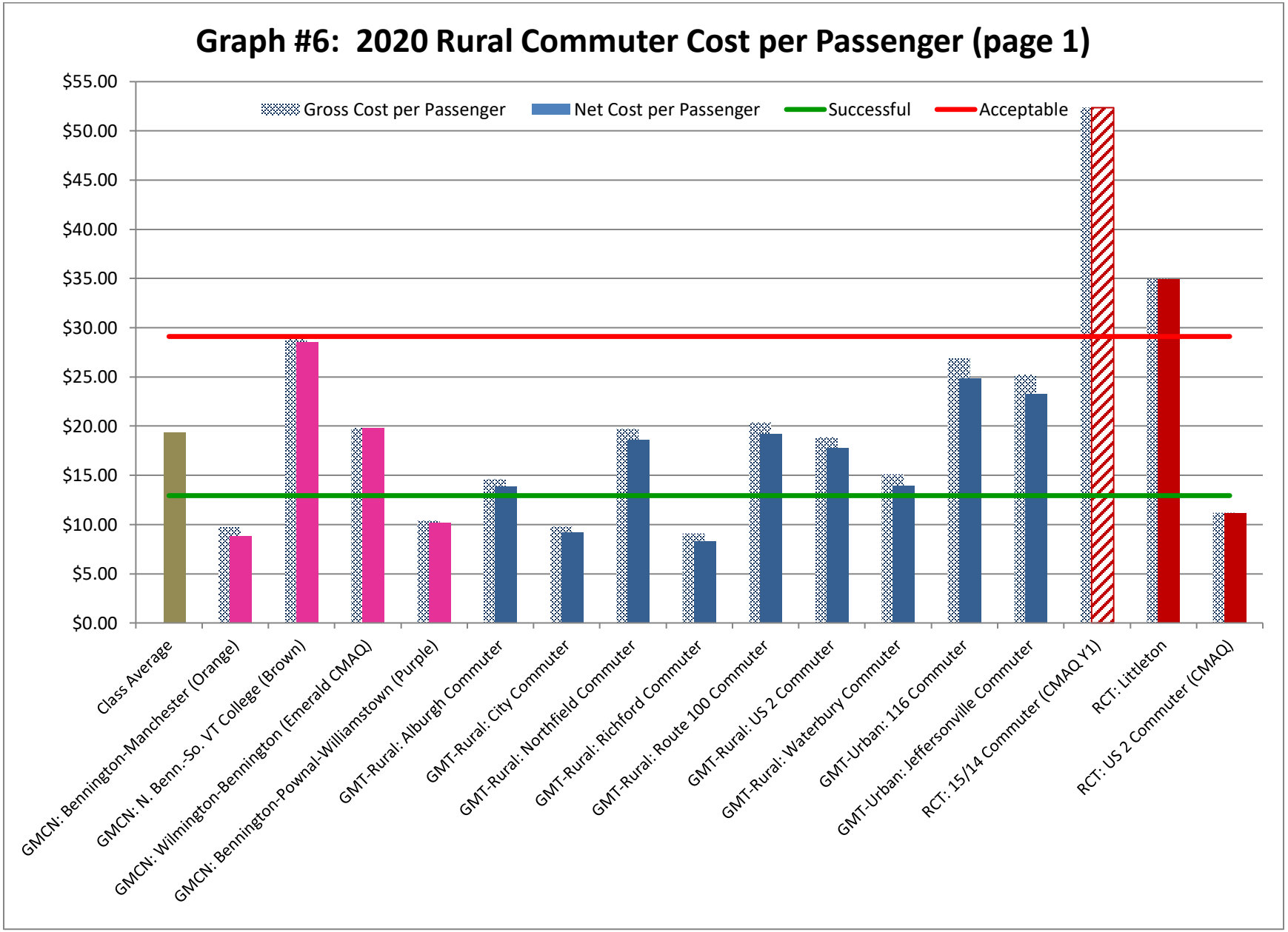
Graph #4: 2020 Tourism Cost per Passenger

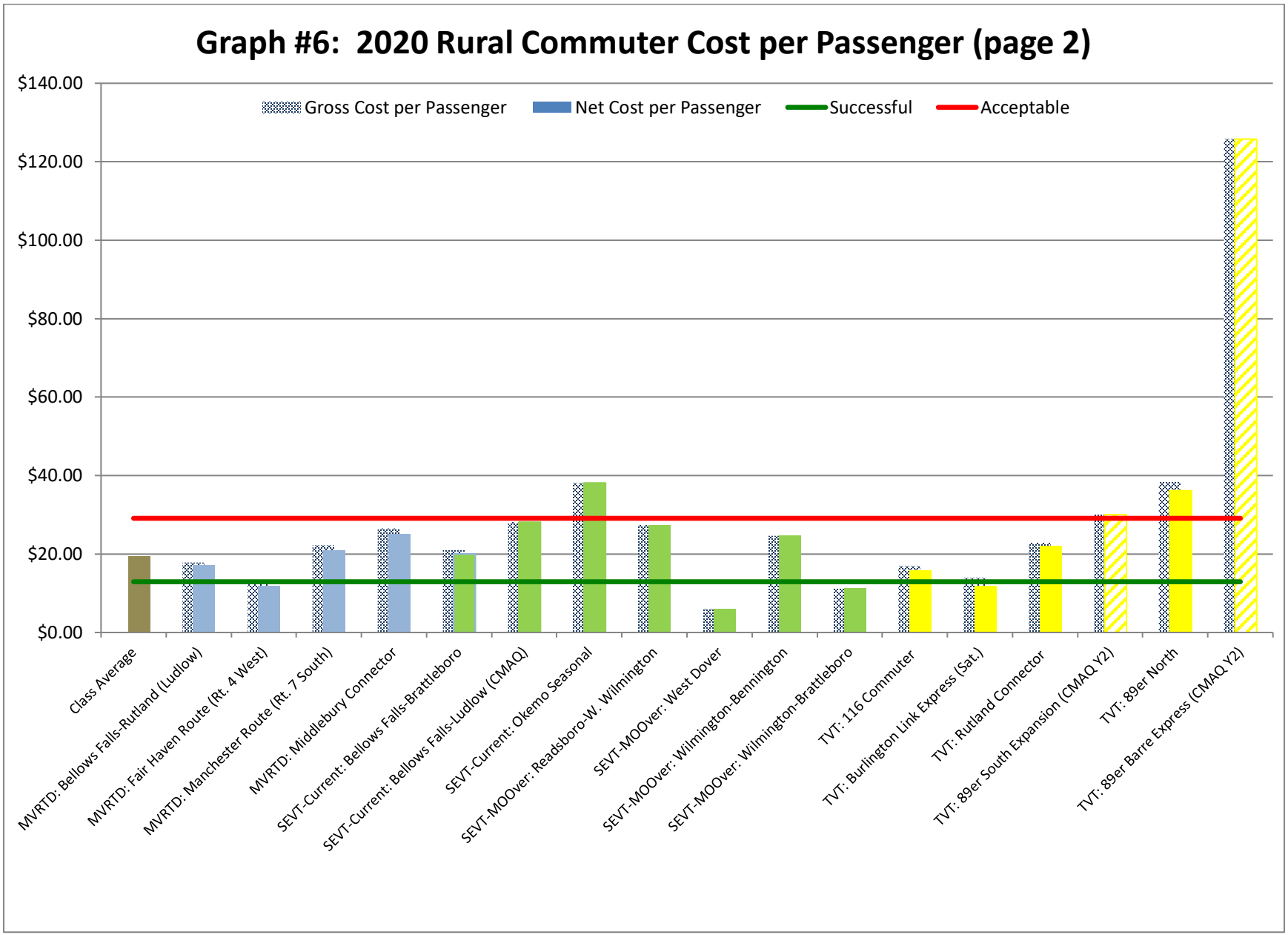


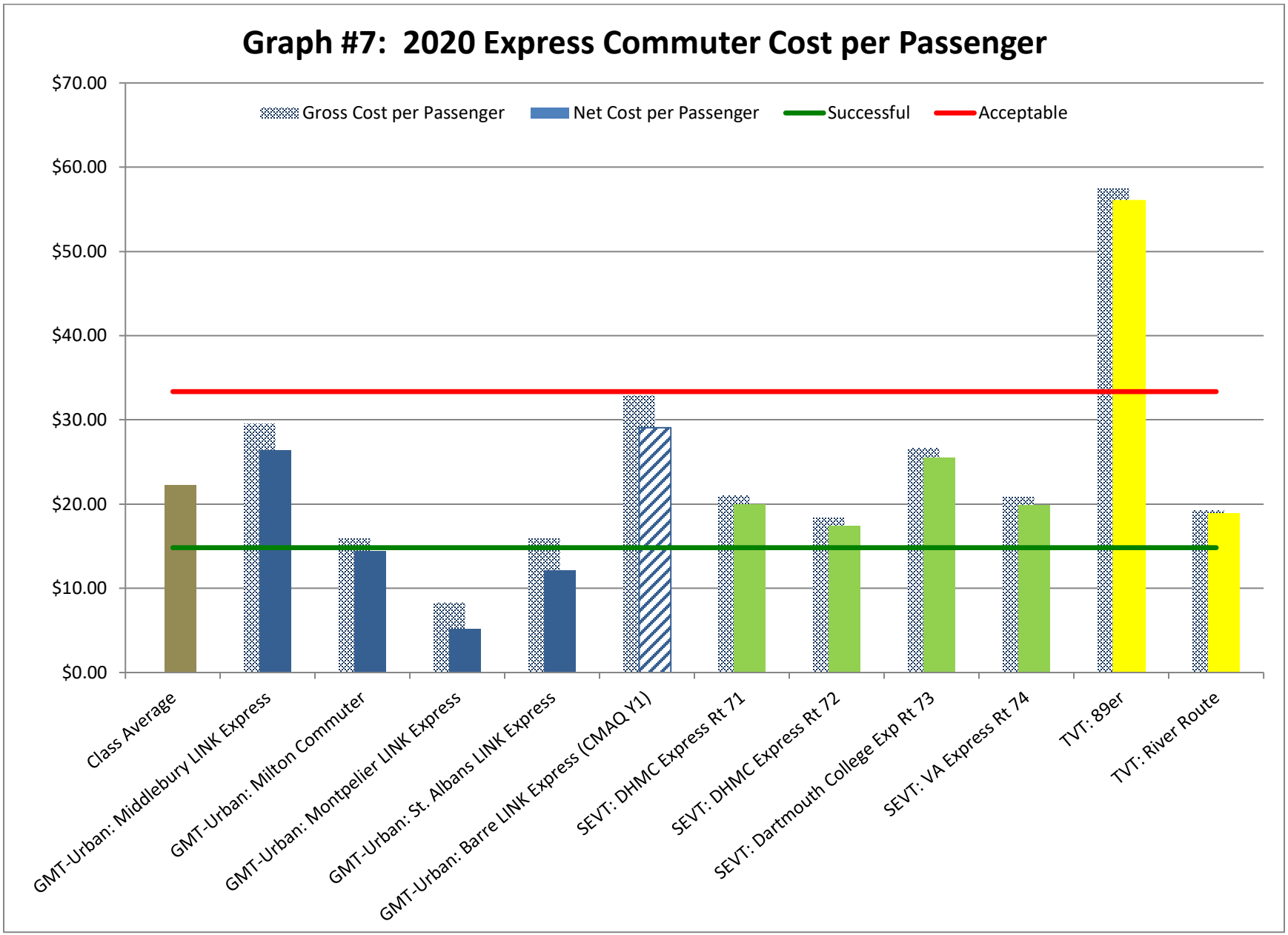
*Privately funded operations; no state or federal funds used.

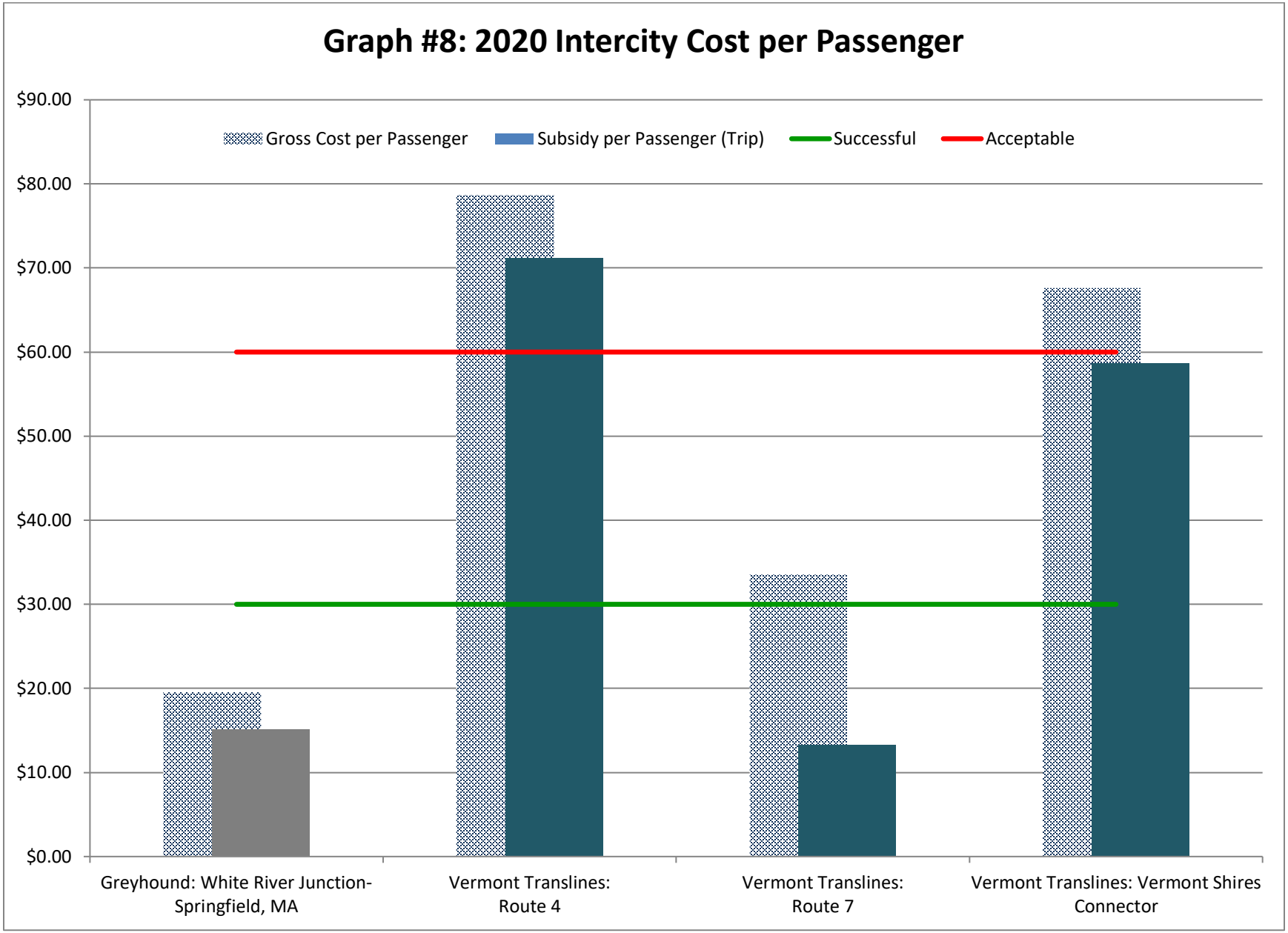
Graph #5: 2020 Rural Cost per Passenger




Graph #6: 2020 Rural Commuter Cost per Passenger (page 1)
$55.00
$50.00
$45.00
$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
Gross Cost per Passenger
Net Cost per Passenger
Successful
Acceptable
Class Average
GMCN: Bennington-Manchester (Orange)
GMCN: N. Benn.-So. VT College (Brown)
GMCN: Wilmington-Bennington (Emerald CMAQ)
GMCN: Bennington-Pownal-Williamstown (Purple)
GMT-Rural: Alburgh Commuter
GMT-Rural: City Commuter
GMT-Rural: Northfield Commuter
GMT-Rural: Richford Commuter
GMT-Rural: Route 100 Commuter
GMT-Rural: US 2 Commuter
GMT-Rural: Waterbury Commuter
GMT-Urban: 116 Commuter
GMT-Urban: Jeffersonville Commuter
RCT: 15/14 Commuter (CMAQ Y1)
RCT: Littleton
RCT: US 2 Commuter (CMAQ)


Graph #6: 2020 Rural Commuter Cost per Passenger (page 2)
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Gross Cost per Passenger
Net Cost per Passenger
Successful
Acceptable
Class Average
MVRTD: Bellows Falls-Rutland (Ludlow)
MVRTD: Fair Haven Route (Rt. 4 West)
MVRTD: Manchester Route (Rt. 7 South)
MVRTD: Middlebury Connector
SEVT-Current: Bellows Falls-Brattleboro
SEVT-Current: Bellows Falls-Ludlow (CMAQ)
SEVT-Current: Okemo Seasonal
SEVT-MOOver: Readsboro-W. Wilmington
SEVT-MOOver: West Dover
SEVT-MOOver: Wilmington-Bennington
SEVT-MOOver: Wilmington-Brattleboro
TVT: 116 Commuter
TVT: Burlington Link Express (Sat.)
TVT: Rutland Connector
TVT: 89er South Expansion (CMAQ Y2)
TVT: 89er North
TVT: 89er Barre Express (CMAQ Y2)


Graph #7: 2020 Express Commuter Cost per Passenger
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Gross Cost per Passenger
Net Cost per Passenger
Successful
Acceptable
Class Average
GMT-Urban: Middlebury LINK Express
GMT-Urban: Milton Commuter
GMT-Urban: Montpelier LINK Express
GMT-Urban: St. Albans LINK Express
GMT-Urban: Barre LINK Express (CMAQ Y1)
SEVT: DHMC Express Rt 71
SEVT: DHMC Express Rt 72
SEVT: Dartmouth College Exp Rt 73
SEVT: VA Express Rt 74
TVT: 89er
TVT: River Route


Graph #8: 2020 Intercity Cost per Passenger
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Gross Cost per Passenger
Subsidy per Passenger (Trip)
Successful
Acceptable
Greyhound: White River Junction-Springfield, MA
Vermont Translines: Route 4
Vermont Translines: Route 7
Vermont Translines: Vermont Shires Connector